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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/633,488	08/01/2003	Geoffrey F. Cox	ST03004USU (172-US-U1)	5142

7590 10/21/2004

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EXAMINER	
MANCHO, RONNIE M	

ART UNIT	PAPER NUMBER
3663	

DATE MAILED: 10/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/633,488	COX ET AL.	
	Examiner	Art Unit	
	Ronnie Mancho	3663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 July 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-34* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *10-31* is/are allowed.

6)☒ Claim(s) *1,9,32 and 33* is/are rejected.

7)☒ Claim(s) *2-8, 34* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1, 9, 32, 33 rejected under 35 U.S.C. 103(a) as being unpatentable over Rabinowitz et al (6373432) in view of Hanson (US 2003/0125877).

Regarding claim 1, Rabinowitz et al disclose a satellite positioning receiver (3, col. 6, lines 66 to col. 7, lines 1-14) capable of receipt of at least three positioning signals (5a-d, fig. 1) comprising:

a navigation processor (56, figs. 1, 3, 9, 10; col. 13, lines 23-67) that processes the at least three positioning signals and determines an at least three code phases; and

a location determined from positioning data (col. 32-34) used to calculate a solution (differential corrections, col. 7, lines 8-14) with the at least three code phases.

On the other hand, Rabinowitz did not disclose a location determined from initial digital terrain elevation data, and an altitude equation derived from the initial digital terrain elevation data. However, Hanson (sections 0038-0041) teaches of a satellite positioning receiver comprising a location determined from initial digital terrain elevation data used to calculate a solution (correction signals, sec 0039) with at least three code phases (note that the code phases are related to signals received from GPS satellites) and an altitude equation derived from the initial digital terrain elevation data.

Therefore, it would have been obvious to one of ordinary skill in the art of DGPS to modify the Rabinowitz et al device as taught by Hanson for the purpose improved accuracy of 1-centimeter resolution.

Regarding claim 9, Rabinowitz et al disclose the receiver of claim 1, wherein the navigation processor 56 is a processor located in a server.

Regarding claim 32, Rabinowitz et al disclose a server (3, col. 6, lines 66 to col. 7, lines 1-14; fig. 1) comprising:

a transceiver (56, figs. 1, 3, 9, 10; col. 13, lines 23-67) that receives a plurality of satellite code phases (5a-d, fig. 1);

a memory with positioning data (col. 13, lines 23-67); and

a controller (56, figs. 1, 3, 9, 10; col. 13, lines 23-67) that processes the plurality of satellite code phases (5a-d, fig. 1) and accesses the positioning data in memory to determine a location indicated by the plurality of satellite code phases (5a-d, fig. 1).

On the other hand, Rabinowitz did not disclose digital terrain elevation data. However, Hanson (sections 0038-0041; figs. 1-3) teaches of a server comprising a controller that processes a plurality of code phases (note that the code phases are related to signals received from GPS satellites) and accesses a digital terrain data in a memory with an initial height (i.e. altitude) to determine a location indicated by the plurality of satellite codes and the digital terrain data.

Therefore, it would have been obvious to one of ordinary skill in the art of DGPS to modify the Rabinowitz et al device as taught by Hanson for the purpose improved accuracy of 1-centimeter resolution.

Regarding claim 33, Rabinowitz et al disclose the server of claim 32, wherein a message 8 (col. 8, lines 6-11) containing the location data is sent from the transceiver.

Allowable Subject Matter

3. Claims 2-8, 34 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

4. The following is a statement of reasons for the indication of allowable subject matter:

In claim 2-8, 34, the prior art does not disclose "an error ellipse" as claimed by the applicant.

5. Claims 10-31 are allowed.

6. The following is an examiner's statement of reasons for allowance:

Regarding independent claims 10, 18, 25, the applicant's particular system and associated method comprising [an error ellipse]... in combination with the other limitations of the claims, was not disclosed by, would not have been obvious over, nor would have been fairly suggested by the prior art of record.

The dependent claims, being further limiting to the independent claims, definite and enabled by the Specification are also allowed.

The closest prior art, (Raboniwitz and Hanson) disclose [a navigation device similar to that of the applicant]. Raboniwitz and Hanson do not disclose [an error ellipse]. Thus, the closest prior art fails to anticipate or render applicant's limitations above obvious.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Response to Arguments

7. Applicant's arguments filed 7/26/04 have been fully considered but they are not persuasive for the following reasons:

The applicant is arguing that Hanson does not teach or disclose an altitude equation derived from initial digital terrain elevation data. The examiner disagrees. First of all the applicant has admitted that Hanson teaches a position determined in a DGPS system wherein the position is determined in terms of longitude, latitude and *altitude*. Here the applicant has at least admitted that a position is determined using an altitude. One of ordinary skill in the art of GPS knows (as admitted by the applicant's specification, page 2, lines 2-6) that position is computed from mathematically calculated equations or algorithms, wherein the algorithms represent an "*altitude equation*" in addition to latitude and longitude equation. Hanson teaches of DGPS. In DGPS, it is inherent that a reference station is located at a Geodetic site, wherein the position of the base station is also computed from GPS satellites. As admitted by the applicant, GPS positions are computed using "altitude equations", page 2, lines 2-6. Therefore, since the base station in Hanson computes positions using DGPS (which is standard), Hanson teaches calculating a position using an altitude equation. In addition, Hanson teaches of geographic positions, which positions are computed from DGPS, and wherein the positions are stored as

digital positions. Hanson, sections 0039, 0040 teaches of calculating (which implies using mathematical equations) positions in the form of *altitude*, longitude and latitude. The positions are also computed in reference to DGPS data (geodetic positional data of a base station) within a degree of accuracy. In section 41, Hanson further teaches that the positions are stored to represent a three-dimensional digitized elevation profile. In Hanson, a user (mobile GPS 131) gets correctional positional information from the base station (DGPS 129) to correct the user's position in reference to that of the base station (DGPS 129). The position of the base station (DGPS 129) is geodetic and is stored digitally. The user (GPS 131) obtains correction positional information (which includes *altitude* information) from the digitized positions of the base station (DGPS 129). Therefore, the user or mobile (GPS 131) determines its position accurately relative to the initial digital terrain data of the base station (DGPS 129). Therefore, the prior art, Hanson (sections 0038-0041) teaches of a satellite positioning receiver comprising a location determined from initial digital terrain elevation data used to calculate a solution (correction signals, sec 0039) with at least three code phases (note that the code phases are related to signals received from GPS satellites) and an altitude equation derived from the initial digital terrain elevation data.

It is therefore believed that the prior art combination is proper, thus the rejection stands.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Communication

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ronnie Mancho whose telephone number is 703-305-6318. The examiner can normally be reached on Mon-Thurs: 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Black can be reached on 703-305-8233. The fax phone number for the organization where this application or proceeding is assigned is 703-305-7687.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1113.

10/18/04.

THOMAS G. BLACK
SUPERVISORY PATENT EXAMINER
GROUP 3600